# Mir crew receives new supplies with Progress docking

By Natasha Calder

The Mir 22 crew spent its week preparing to receive a host of new supplies which arrived at the space station early this morning on board a Progress resupply capsule which launched from Russia early Wednesday.

Cosmonaut Researcher John Blaha and his crewmates—Commander Valery Korzun and Flight Engineer Alexander "Sasha" Kalerireceived all sorts of new supplies needed for their ongoing mission, including food, clothing, water and fuel for the stations engines, along with other personal items sent up by their families for the upcoming holidays.

To prepare for and study the docking of the new Progress, the Space Acceleration

Measurement System was activated on the station prior to the undocking of the resident Progress to measure the microgravity disturbances caused by the undocking and docking of vehicles with the station. The experiment measured the disturbances in order to determine to what extent the movements may affect data being obtained from the numerous science experiments being conducted on board Mir.

Blaha said this resupply process, along with other systems and procedures currently being conducted on Mir, is being performed much as it will be on the space station.



"All of these things that we're doing are just folding in to really make us get a head start when we get our new space station in orbit," Blaha said. "I'm very proud to be a small part of that development process.3

Other work performed on the station this week included additional experiments routinely scheduled with a planned undocking of a Russian or American spacecraft.

This work included the collection of urine and saliva samples from the crew needed for a metabolic study relating protein metabolism and kidney stone risk. This sample collection is done within 14 days of an undocking so that the excess urine can be properly disposed. The crew also conducted an analysis of some of the data collected during the monthly microbial sampling of the air, surfaces, water supply and crew to study the station's environment and its inhabitants.

Blaha also has been taking advantage of the view from the space station, continuing with Earth observations and photographing the planet."I have filmed just about the whole planet now," Blaha said. "I got some beautiful photography of Australia...and fantastic photography of the United States, many cities and a lot of photography of different ocean areas for oceanographers.

#### JSC volunteers sought for Engineer's week

The Education Outreach Program is recruiting employees to volunteer for National Engineers Week, that will be held February 16-22.

Volunteers are asked to commit to giving one to two classroom presentations to schools within school districts of their choice anytime during the month of February. With supervisory approval, JSC civil service employees may charge their time spent away from work to a special education labor code. Contractor employees are asked to obtain approval from their company education representatives to participate in this JSC-sponsored community educational activity.

To help prepare volunteers for classroom presentations, two orientation meetings will be held at noon, Jan. 23-24 in Teague Auditorium. A panel of aerospace education specialists will discuss presentation tips, demonstrate hands-on activities for use in the classroom and provide information on access to resources such as exhibits, videos and promotional materials.

To volunteer, please contact Mae Mangieri at x32929 no later than Nov. 29.

### MCC open for viewing during STS-80

The Mission Control Center viewing room will be open for JSC and contractor badged employees and their families during portions of the STS-80 mission.

Employees will be allowed to visit the MCC from 5-7 p.m. Monday, Wednesday and Dec. 3; 11:30-1:30 p.m. today, Tuesday and Nov. 29; 1-3 p.m. Saturday, Sunday, Nov. 30 and Dec. 1; 11:30 a.m.-1 p.m. Dec. 2 and Dec. 4; and for landing Dec. 5.

For the latest information on the schedule, call the Employee Information Service at x36765.

During STS-80, sighting opportuarea at 6:11 a.m. Thursday, 5:53 a.m. Dec. 1 and 6:19 a.m. Dec. 2. For more information on how to spot the orbiter, visit the shuttle home page at URL: http://shuttle



From left Astronaut Don Thomas and Lynn Heninger, deputy associate administrator of Legislative Affairs, show Todd Schultz, chief of staff from the Office of U.S. Representative James Sensenbrenner, the flight deck of the Crew Compartment Trainer in Bldg. 9 during NASA JSC Inspection Day.

### Employees' children may enter '97 safety calendar poster contest

By Rindy Carmichael

Children of all JSC personnel are invited to enter the 1997 Safety and Total Health Calendar Poster Contest.

Children will enter their artwork based on a theme according to their age group for possible placement into a 1997 calendar distributed center-wide. The overall theme for the calendar is "Safety and Health Are Up to Me."

The calendars will be 11 x 17, printed in full color, and bordered by a total of 36 winning posters. The winners will have the honor of being published and receive a T-shirt with their poster reprinted on it.

Deadline for entries is Dec. 2 and only poster boards provided by JSC may be used for drawings. Poster boards are available in Bldgs. 3 and 11 cafeterias, Bldgs. 1, 8, and 419 lobbies or can be requested by calling 244-5078. Rules and regulations are found on the back of the poster boards and must be adhered to for eligibility in the contest.

All civil service employees will receive one calendar free of charge. Contractors are asked to contact their company's management for information regarding obtaining a copy. Calendars may be purchased after the first of the year at the Bldg. 11 Exchange Store.

#### **JSC, NASA experiments** lost on Mars '96 probe

Two NASA experiments were lost this week on Russia's Mars '96 probe, but JSC scientists say the outgrowth of the experiments will help astronauts now.

The JSC Inter Mars Tissue Equivalent Proportion, or ITEP, and the Mars Oxidation experiments were lost when the Mars '96 mission failed to leave Earth's orbit following its Saturday launch and fell into the Pacific Ocean. The engine of the vehicle's fourth stage, which would have carried the spacecraft on toward Mars, apparently failed to ignite.

The ITEPC was designed to characterize the radiation field that humans would experience en route to and at Mars. It was developed by Gautam Badhwar of the Earth Science and Solar System Exploration Division with major support from the Batelle Northwest Labs and Lockheed-Martin.

"This is a pretty significant loss," said Mike Golightly of the Earth Science and Solar System Exploration Division who relies on the data from the ITEPC. "There are uncertainties as to how much radiation astronauts will be exposed to on their way to and at Mars. This experiment would have provided important data for planning a human exploration of Mars. Now we have to

While the Mars experiment may be lost, the outgrowth of this development is an ITEPC for shuttle flights. The ITEPC provides radiation measurements inside the payload bay. These measurements improve the understanding of the external radiation environment experienced by astronauts during space walks. In addition, comparisons of ITEPC data and measurements from inside the shuttle crew compartment are used to determine the effectiveness of the shuttle's structure in reducing the radiation exposure received by the astronauts.

The Mars Oxidation experiment was designed to measure the rate at which metals and organics corrode when exposed to the Martian environment.

"We were hoping MOx would be able to tell us more about the surprisingly reactive properties of the Martian soil first detected by the Viking biology experiments and tell us if this reactivity is the cause of the complete absence of organics in the surface soil on Mars," said Christopher McKay, project scientist at NASA's Ames Research Center. "The loss of MOx is all the more disappointing given the recent results of the Mars meteorite studies. There is clear evidence of organics in these meteorites. The question of organics and where on Mars they might be found is key to any future search for evidence of life."

## STS-80 crew to conduct high blood pressure experiments

(Continued from Page 1)

'On this particular flight we expect to grow seven wafers which will be distributed among our commercial nities will be possible in the Houston suppliers so that they can use them to determine the actual quality and how they can be used in circuits.' said Ed Gabris, director of the

> Headquarters, this week. Once the WSF is secure in

Space Processing Division at NASA

Columbia's cargo bay, the crew will turn its attention to one of two space walks scheduled for this mission.

maneuver large space station studied, one on a low-calcium diet, Orbital Replacement Units, or ORUs. The second space walk, set for Flight Day 12, will focus on the Portable Work Platform and how well crew members can move around to assemble the station.

In addition, rats with high blood pressure will be flying on STS-80 and may help scientists understand the other on a diet high in calcium. After the flight, scientists will conduct tests to find out how the different calcium intakes affected cardiovascular

functioning and blood pressure. "A large body of evidence indi-

cates that problems in the way the body processes calcium also can lead to hypertension, or high blood The first space walk on Flight Day how calcium helps maintain human pressure," said Daniel Hatton, a 10 will focus on the use of a crane to health. Two groups of rats will be hypertension specialist from the Oregon Health Sciences University.

> "This research offers hope to the tens of millions of people suffering from calcium-related conditions such as osteoporosis and hypertension," said David McCarron also a hypertension specialist from Oregon.

### **Weather Channel features JSC** shuttle weather support program

The Weather Channel is showing a feature on Space Shuttle Program weather support this weekend on its "WeatherScope" segment.

The feature, "Forecasting for Space" featuring the Spaceflight Meteorology Group at JSC, originally was a five-part series giving a brief historical background on shuttle weather support with highlights from STS-78 and a description of the JSC group and the U.S Air Force's 45th Weather Squadron in Florida.

The 20 minute feature will be aired in its entirety at 11 a.m. Saturday and Sunday. However, these schedules may be altered if the Weather Channel is covering a breaking weather story.

"The Weather Channel is viewed

by millions of people in North America and this will provide excellent visibility for NASA and its critical weather support functions," said SMG Chief Frank Brody.

The SMG is a group of 10 experienced and highly trained meteorologists who provide a number of services, including serving as member of the JSC Flight Control Team in mission control, and providing detailed forecasts for shuttle landing sites, as well as forecasts for abort landing sites. On-orbit support includes forecasts for primary landing sites. In addition, SMG issues advisories on significant local weather events for weather-sensitive Ellington Field and JSC operations and provides weather briefings for astronauts.

# **Space News** Roundup

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#### Node delivery in six months (Continued from Page 1)

Node 1 is the first U.S. space station component scheduled to be launched in December 1997. The node serves as connecting passageway to other modules on the International Space Station. With the pressure test now completed, Node 1 will be moved out of the Boeing test facility and returned to the space station manufacturing building for assembly and checkout activities at NASA's Marshall

Space Flight Center. Last August, Node 1 and the laboratory module successfully completed a series of proof pressure tests. Like this last Node 1 test, data analysis from the August tests indicated both modules perfor-

mance was excellent. Just six months from now, in

May 1997, Node 1 will be shipped out of Huntsville to the Kennedy Space Center in preparation for its early December 1997 shuttle launch to join the Russian-built functional energy block, or FGB. The FGB is scheduled for launch in late November 1997, just one week before it is joined by Node 1 over 220 miles above the Earth. The FGB is a self powered vehicle that provides attitude control and electrical power through the early assembly stages of the space

Once assembled, the space station will have a mass of nearly 1 million pounds and provide more than 46,000 cubic feet of pressurized living and working space for astronauts. Construction is scheduled to be completed in June 2002.